State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-125
Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board at Sections 43000.5, 43013, and 43018 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9; and

IT IS ORDERED AND RESOLVED: That the following diesel engines and the exhaust emission control systems produced by the manufacturer are certified as described below for use in heavy-duty off-road equipment:

Model Year: 2000

Typical Equipment Usage: Dozer and Industrial equipment

Engine Power Ratings Range: 175 – 750 horsepower, inclusive

Fuel Type: Diesel

Engine Family	Displacement Liters	Displacement Cubic Inches	Exhaust Emission Control Systems and Special Features
YCPXL27.0HRN	27.0	1658	Engine Control Module Turbocharger Charge Air Cooler

The engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values in grams per brake horsepower-hour (g/hp-h) for total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak-values from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

	Exhaust Emissions (g/hp-h)				Smoke Opacity (%)		
	THC	CO	NOx	PM	Accel	Lug	Peak
Standard	1.0	8.5	6.9	0.4	20	15	50
Certification	0.1	1.0	6.2	0.3	12	2	35

BE IT FURTHER RESOLVED: That the listed engine models comply with "Exhaust Emission Standards and Test Procedures—Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels—1996 and Later Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 *et seq.*).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 17th day of December 1999.

Raphael Susnowitz

for R. B. Summerfield, Chief
Mobile Source Operations Division

11/9/99

LARGE ENGINE MODEL SUMMARY

EO: U-R-1-125

Manufacturer: **CATERPILLAR INC.**

Process Code: **New Submission**

EPA Engine Family: **YCPXL27.0HRN**

Manufacturer Family Name: **NA**

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
Note: Peak HP	and Peak Torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
1 - Cert Engine	3412	730 @ 1800	221	267.5	2555 @ 1200	255	206.2	EM, DI, TC, ECM,
2	3412	700 @ 1800	210	254.4	2452 @ 1200	241	194.4	EM, DI,TC, ECM,
3	3412	680 @ 2000	191	257.1	2143 @ 1400	214	202.0	EM, DI,TC, ECM,
4	3412	650 @ 2000	180	242.7	2050 @ 1400	203	191.1	EM, DI,TC, ECM,
5	3412	579 @ 1800	170	206.0	2031 @ 1200	201	162.4	EM, DI,TC, ECM,
6	3412	550 @ 1800	164	198.8	1925 @ 1200	190	153.3	EM, DI,TC, ECM,
7	3412	540 @ 2000	154	207.5	1768 @ 1300	174	152.0	EM, DI,TC, ECM,
8	3412	613 @ 1900	176	224.9	2114 @ 1200	210	169.7	EM, DI,TC, ECM,
9	3412	577 @ 1900	165	210.6	1917 @ 1200	190	153.3	EM, DI,TC, ECM,
10	3412	700 @ 2100	191	270.5	2101 @ 1400	206	194.4	EM, DI,TC, ECM,
11	3412	750 @ 2100	205	289.6	2250 @ 1400	220	207.0	EM, DI,TC, ECM,
12	3412	500 @ 1800	151	183.3	1752 @ 1200	176	141.9	EM, DI,TC, ECM,
13	3412	550 @ 2000	152	204.2	1732 @ 1400	173	163.1	EM, DI,TC, ECM,
14	3412	600 @ 2000	167	225.0	1891 @ 1400	187	175.8	EM, DI,TC, ECM,
15	3412	550 @ 1800	163	197.1	1925 @ 1200	197	159.1	EM, DI,TC, ECM,
16	3412	600 @ 1800	178	215.1	2101 @ 1200	215	173.7	EM, DI,TC, ECM,
17	3412	650 @ 1800	187	226.2	2278 @ 1200	231	186.5	EM, DI,TC, ECM,
18	3412	575 @ 2100	161	227.0	1726 @ 1400	169	159.5	EM, DI,TC, ECM,
19	3412	600 @ 2100	170	239.7	1801 @ 1400	177	166.5	EM, DI,TC, ECM,
20	3412	650 @ 2100	175	247.0	1952 @ 1400	193	182.1	EM, DI,TC, ECM,
21	3412	577 @ 1900	164	210.2	2025 @ 1200	197	159.4	EM, DI,TC, ECM,
22	3412	632 @ 1900	177	226.9	2222 @ 1200	218	176.1	EM, DI,TC, ECM,
23	3412	613 @ 1900	176	224.9	2114 @ 1200	210	169.7	EM, DI,TC, ECM, CAC